ASX RELEASE
1 November 2022

DIRECTORS / MANAGEMENT

Russell Davis
Chairman

Daniel Thomas
Managing Director

Ziggy Lubieniecki
Non-Executive Director

David Church
Non–Executive Director

Mark Pitts
Company Secretary

Mark Whittle
Chief Operating Officer

CAPITAL STRUCTURE

ASX Code: HMX

Share Price (31/10/2022)	$0.064
Shares on Issue	820m
Market Cap	$52m
Options Unlisted	21m
Performance Rights	8m
Cash (30/9/2022)	$3.6m

SUCCESSFUL ORE SORTING TRIAL AT KALMAN

- Trial test work using a bulk sample taken from the **Kalman deposit has shown that ~80% of ore can potentially be recovered with a ~40-45% reduction in mass processed.** Specifically:
  - **Copper grade increase of 28%** (0.71% to 0.91% Cu) with a **mass reduction of 35%** and recovery of 83.4%;
  - **Gold grade increase of 39%** (0.23g/t to 0.32g/t Au) with a **mass reduction of 35%** and recovery of 91%; and
  - **Molybdenum grade increase of 103% (0.33% to 0.67% Mo)** with a **mass reduction of 62%** and a recovery of 77%*.
- Ore sorting technology, if applied, at Kalman has the potential to reduce mill throughput resulting in favourable capital and operational expenditure outcomes.
- **Further test work is planned on the bulk sample to refine these results.**
- **Upcoming drilling program at Kalman has been designed to test for northern shallow extensions of the orebody.**
- Opportunity to optimise cut-off grades and **update the Resource model at Kalman.**

Figure 1. *Overhead view of Kalman looking south. The deposit is located beneath the quartz ridge in the mid-ground*

* *As Rhenium is hosted within Mo the sample recovery and mass reduction will be similar to Mo.*

Hammer's Managing Director, Daniel Thomas said:

"This is a tremendous result from early-stage test work and shows that the Kalman deposit is amenable to ore sorting technology. Processing costs can represent a significant proportion (>50%) of overall production costs and reducing the amount of sub-economic material going through a grinding and flotation circuit could significantly increase project returns. Similarly, an increased head grade through the grinding/flotation circuit may lead to significant capital savings by reducing the required throughput capacity of the plant.

"It was pleasing to see the copper and molybdenum ore domains both behave in a similar manner to the same sort algorithm. The overall benefits of ore sorting will not only apply to reduced operating and capital costs, but are also likely to result in an expanded resource when the upgrade factors are applied within the Kalman Resource model.

"It's an exciting time for the Kalman Project as we embark on further shallow extensional drilling. Successful drilling and learnings from the ore sorting test work will enable Hammer to review and upgrade the existing resource model."

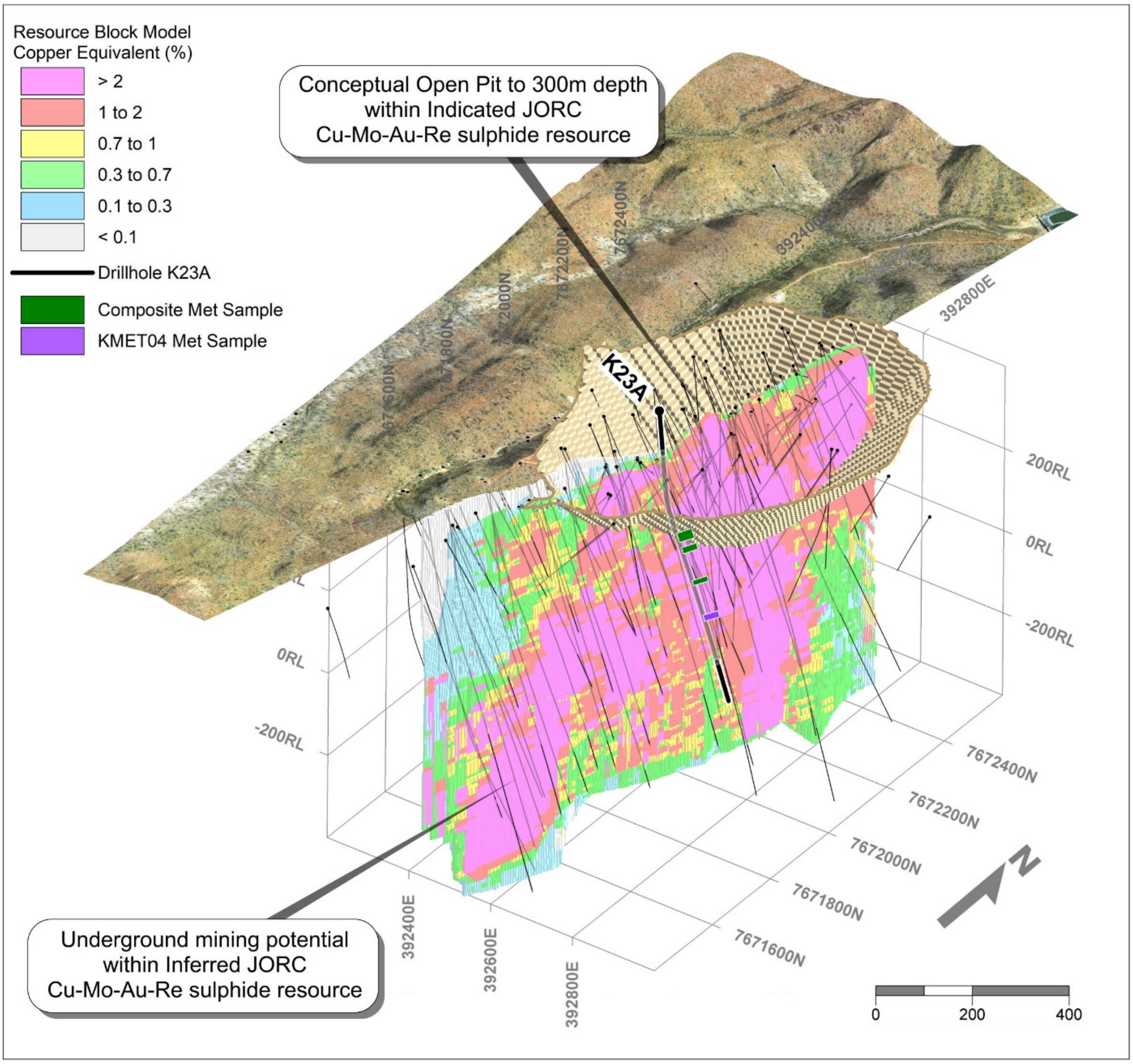


Figure 2. *Oblique view of the Kalman Deposit showing the location of K-23A utilised in the ore sorting trial*

Hammer Metals Ltd (**ASX: HMX**) ("**Hammer**" or the "**Company**") is pleased to advise that the preliminary ore sorting test-work has been completed on samples taken from the Kalman Cu-Au-Mo-Re deposit, located 60km south-east of Mt Isa in North-West Queensland.

The test work was conducted by Steinert at its Bibra Lake facility utilising a combination of 3D laser and X-Ray sensors to differentiate inputs into waste and those matching parameters of target elements. These two sensors were utilised to tailor an optimum combination for specific mineralisation mineralogy.

The aim of this trial test work was to determine whether ore sorting technology could be applied to ore from the Kalman Deposit. The favourable initial results give Hammer confidence to embark on a larger program of testwork.

Location of samples

Samples were taken from K-23A and consisted of half core†. Four samples, representing distinct ore zones, were taken based on whether ore was dominantly copper or molybdenum rich. Overall, these samples, when combined, provided a representative sample of Kalman's copper, gold, molybdenum and rhenium resource grades.

Table 1. *Collar details for K-23A and sample location details for samples KMET01 through KMET04*

Hole	COMPANY	E_GDA94	N_GDA94	RL	TD	Dip	Az_GDA
K-23A	Kings	392545.4	7672047.3	419.8	647.3	-85	90
Note							
Location and Azimuth relative to GDA94 Zone54							

SAMPLE ID	Hole	FROM	TO	INTERVAL
KMET01	K-23A	325	339	14
KMET02	K-23A	352	365	13
KMET03	K-23A	428	438	10
COMPOSITE	K-23A	325	438	37
KMET04	K-23A	507	519	12

Process and results

These samples were transported to Western Australia and crushed to 10-31.5mm. Before combining the samples, each sample was scanned separately using the combination sensor sorter, taking measurements from all four sensors. The scan data was used to develop a bespoke combination of XRT and 3D-laser sort program.

Given the similarity in the nature of the copper ore and each response to the initial scan, samples KMET01-KMET03, were combined. It was decided that KMET04, which was molybdenum-rich, was processed separately.

Steinert ran the material through the ore sorting test rig in multiple passes to examine the sensitivity of Kalman ore to various settings. Multiple passes of each sample were conducted to examine mass reduction and beneficiation.

Pleasingly, utilising the same sorting program, the behaviour of the two separate samples, KMET01-03 and KMET04 was similar, indicating the suitability of the ore sorting technology to be applied across the Kalman deposit.

---

† *K-23A was drilled by Kings Minerals NL in 2007. The drillhole details were reported to the ASX under stock code KMN on 19 October 2007. The data underlying this hole was compiled, validated and has been used in previous resource estimates for the Kalman Deposit. HMX ASX announcement 27 September 2016 'Kalman Resource Update'.*

The results indicate that >80% of the combined value of the ore can be recovered with a 40-45% reduction in mass processed. Specifically, the ore sorting setting of rejecting low density material could achieve:

- **Copper grade increase of 28% (0.71% to 0.91% Cu) with a mass reduction of 35% and recovery of 83.4%;**
- **Gold grade increase of 39% (0.23g/t to 0.32g/t Au) with a mass reduction of 35% and recovery of 90.7% %; and**
- **Molybdenum grade increase of 103% (0.33% to 0.67%Mo) with a mass reduction of 61.8% and a recovery of 76.6%[‡].**

The initial work indicates that the Kalman deposit is very amenable to ore sorting and that bulk testwork should be undertaken.

Next Steps

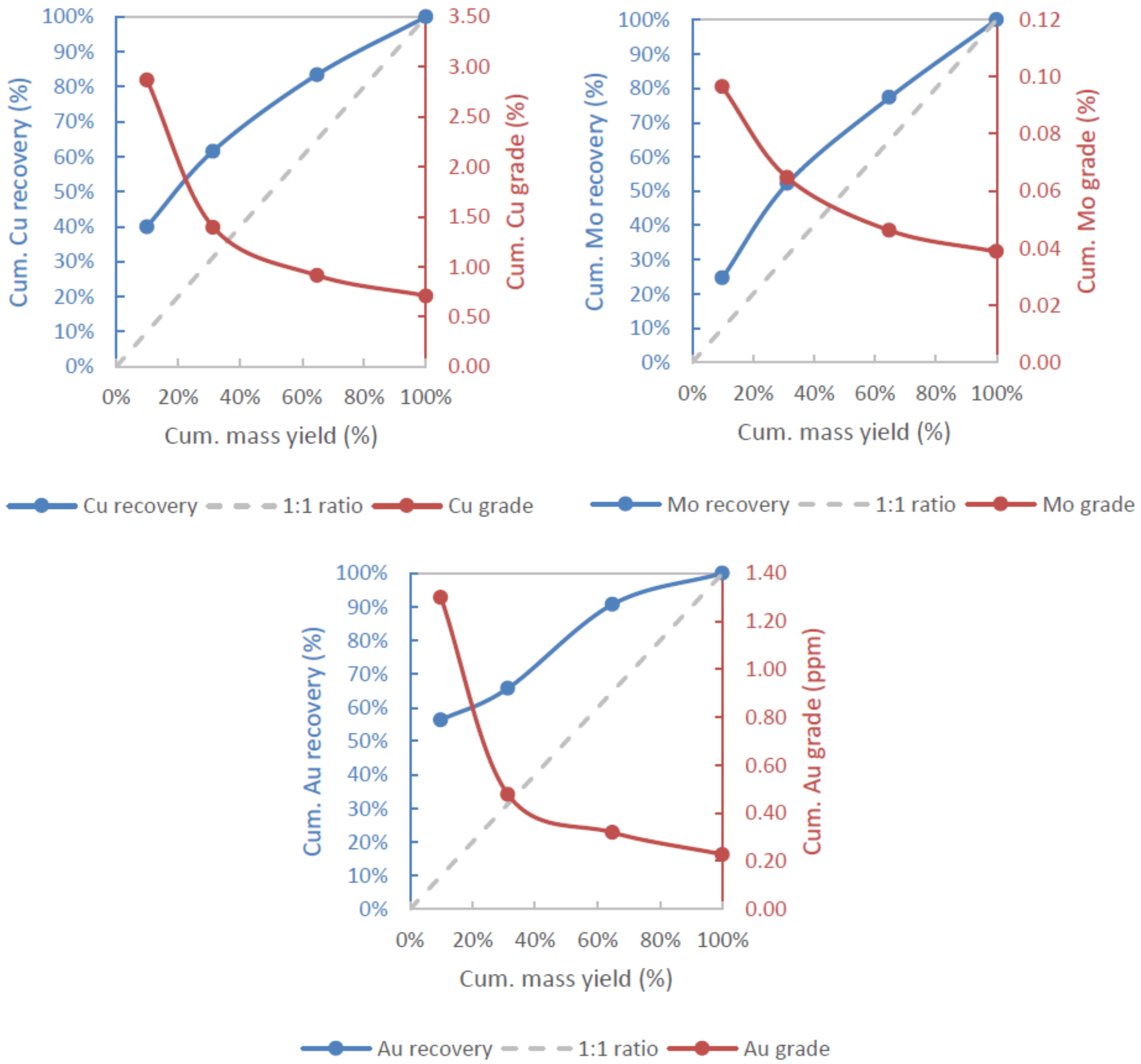
Hammer is reviewing the initial ore sorting testwork results and identifying zones within the Kalman Deposit which could be utilised in a more expansive program. Hammer is also reviewing these results in the context of potential changes in resource modelling in combination with potential scale decisions for a future scoping study on the project.

A review of the resource model is likely to be considered post the completion of the upcoming extensional drilling program.

Figure 3. *Oresorter test facility at the Steinert facility in Bibra Lake in Perth, Western Australia*

‡ *As Rhenium is hosted within Mo the sample recovery and mass reduction will be similar to Mo.*

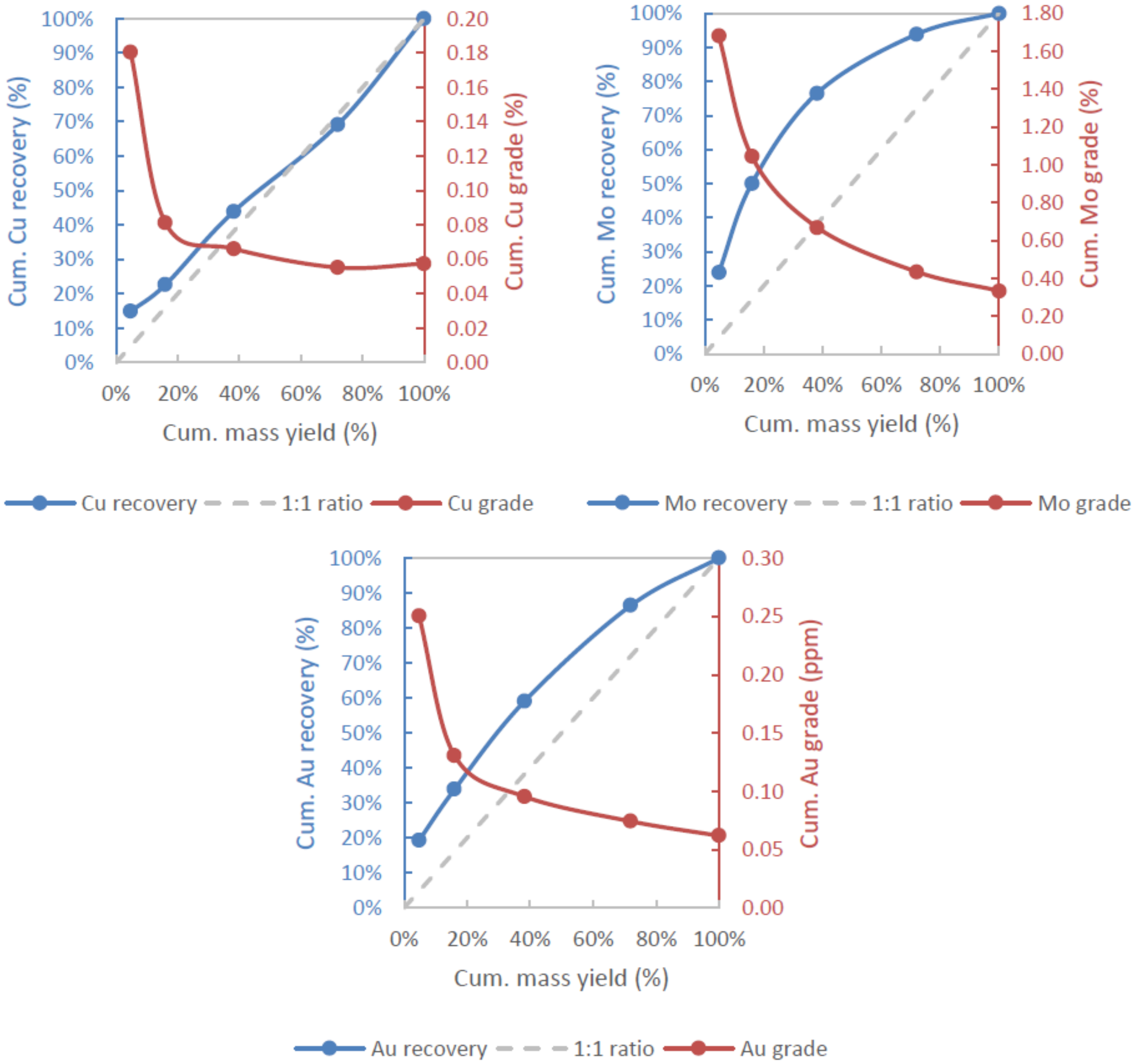
Figure 4*. Examples of trial samples KMET01 (top left), KMET02 (top right), KMET03 (bottom left) and KMET04 (bottom right). Samples 1 through 3 are from the Cu-Au domain and were amalgamated. KMET04 was from the Mo-Re domain and was run separately.*



Mixed Composite - KMET01, KMET02 and KMET03							
Sort Fraction	Mass kg	Mass Yield %	Cum. Mass Yield %	Cu Grade %	Cu Cum. Grade %	Cu Recovery %	Cu Cum. Recovery %
P1E - High Density	4.37	9.9%	9.9%	2.87	2.87	40.0%	40.0%
P2E - Medium Density	9.46	21.4%	31.3%	0.72	1.40	21.6%	61.6%
P3E - Medium-Low Density	14.84	33.6%	64.8%	0.46	0.91	21.8%	83.4%
P3D - Waste (+10mm)	15.54	35.2%	100.0%	0.33	0.71	16.6%	100.0%
Total	44.20	100.0%	-	0.71	-	100.0%	-

Mixed Composite - KMET01, KMET02 and KMET03								
Sort Fraction	Mo Grade %	Mo Cum. Grade %	Mo Recovery %	Mo Cum. Recovery %	Au Grade ppm	Au Cum. Grade ppm	Au Recovery %	Au Cum. Recovery %
P1E - High Density	0.10	0.10	24.6%	24.6%	1.30	1.30	56.3%	56.3%
P2E - Medium Density	0.05	0.06	27.6%	52.2%	0.10	0.48	9.4%	65.7%
P3E - Medium-Low Density	0.03	0.05	25.1%	77.3%	0.17	0.32	25.0%	90.7%
P3D - Waste (+10mm)	0.03	0.04	22.7%	100.0%	0.06	0.23	9.3%	100.0%
Total	0.04	-	100.0%	-	0.23	-	100.0%	-

***Figure 5**. KMET01, KMET02 and KMET03 Composite sample – Cumulative Cu, Mo and Au recoveries. The grey dotted line indicates the recovery vs mass yield 1:1 ratio line*



KMET04							
Sort Fraction	Mass kg	Mass Yield %	Cum. Mass Yield %	Cu Grade %	Cu Cum. Grade %	Cu Recovery %	Cu Cum. Recovery %
P1E - High Density	0.71	4.8%	4.8%	0.18	0.18	14.9%	14.9%
P2E - Medium Density	1.67	11.2%	16.0%	0.04	0.08	7.7%	22.6%
P3E - Medium-Low Density	3.30	22.2%	38.2%	0.06	0.07	21.3%	43.9%
P4E - Low Density	5.00	33.7%	71.9%	0.04	0.06	25.2%	69.1%
P4D - Waste (+10mm)	4.16	28.1%	100.0%	0.06	0.06	30.9%	100.0%
Total	14.83	100.0%	-	0.06	-	100.0%	-

KMET04								
Sort Fraction	Mo Grade %	Mo Cum. Grade %	Mo Recovery %	Mo Cum. Recovery %	Au Grade ppm	Au Cum. Grade ppm	Au Recovery %	Au Cum. Recovery %
P1E - High Density	1.68	1.68	24.0%	24.0%	0.25	0.25	19.3%	19.3%
P2E - Medium Density	0.77	1.04	26.1%	50.0%	0.08	0.13	14.6%	33.8%
P3E - Medium-Low Density	0.40	0.67	26.5%	76.6%	0.07	0.10	25.2%	59.0%
P4E - Low Density	0.17	0.43	17.2%	93.8%	0.05	0.07	27.3%	86.3%
P4D - Waste (+10mm)	0.07	0.33	6.2%	100.0%	0.03	0.06	13.7%	100.0%
Total	0.33	-	100.0%	-	0.06	-	100.0%	-

***Figure 6**. KMET04 sample – Cumulative Cu, Mo and Au recoveries. The grey dotted line indicates the recovery vs mass yield 1:1 ratio line*

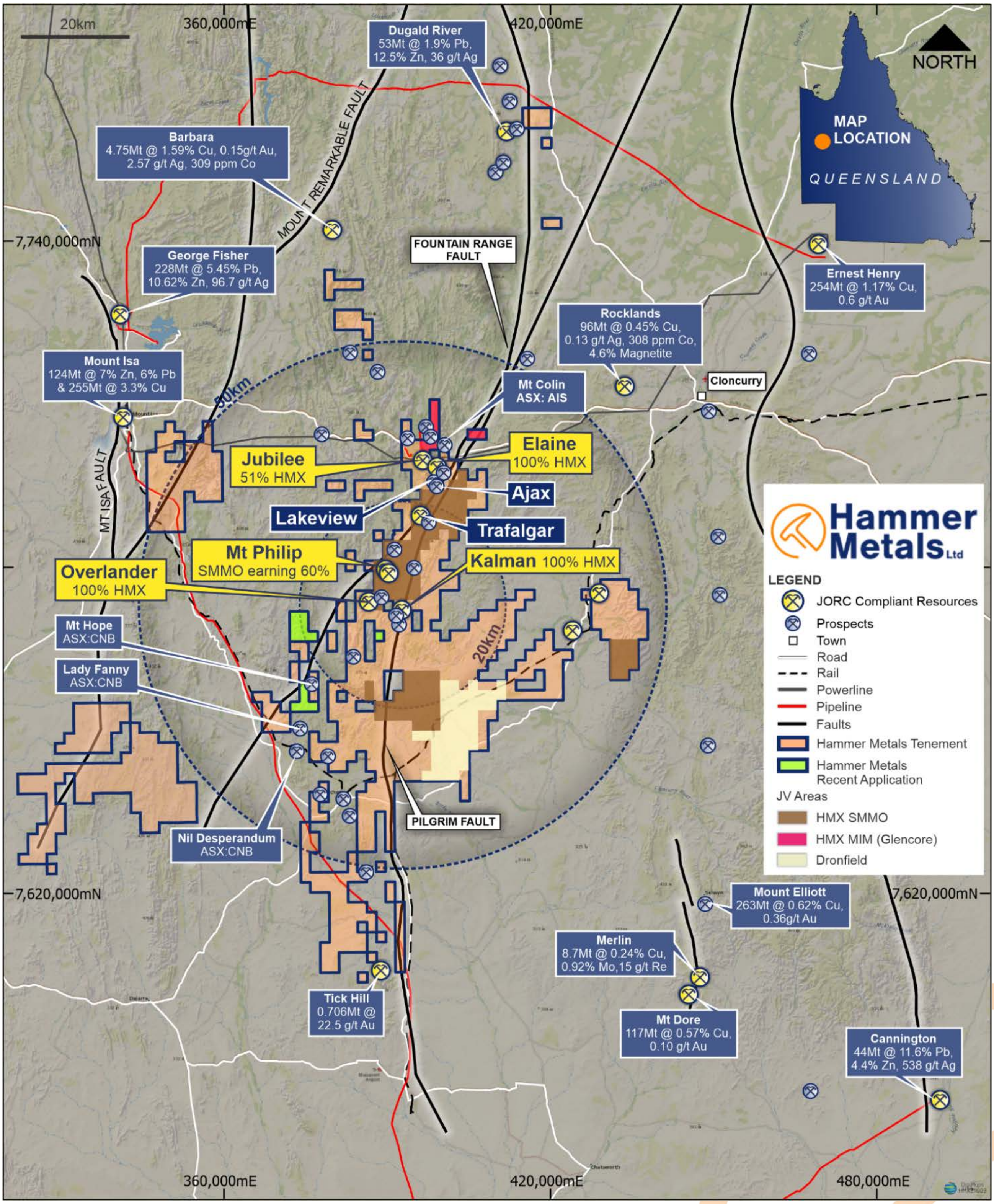


Figure 7: *Mt Isa Project Area*

Expected Newsflow

- **November:** Lakeview JORC Resource
- **November:** Updates on drilling at Kalman, Mount Hope, Lord Nelson and Mascotte
- **November:** Mt Isa East JV Update – Pearl and Trafalgar drilling results
- **November:** Annual General Meeting
- **November/December:** Yandal Targets Update – Field reviews of Nickel/Gold/Lithium target areas
- **November/December:** Hardway Rare Earth historical drill hole re-sampling and assays

This announcement has been authorised for issue by the Board of Hammer Metals Limited in accordance with ASX Listing Rule 15.5.

For further information please contact:

Daniel Thomas
Managing Director

T +61 8 6369 1195
E info@hammermetals.com.au

Media Enquiries:
Nicholas Read – Read Corporate

T +61 9 9388 1474
E info@readcorporate.com.au

- END -

About Hammer Metals

Hammer Metals Limited (ASX: HMX) holds a 100% interest in the Bronzewing South Gold Project located adjacent to the 2.3 million-ounce Bronzewing gold deposit in the highly endowed Yandal Belt of Western Australia. Hammer holds a strategic tenement position covering approximately 2,600km^2 within the Mount Isa mining district, with 100% interests in the Kalman (Cu-Au-Mo-Re) deposit, the Overlander North and Overlander South (Cu-Co) deposits and the Elaine (Cu-Au) deposit. Hammer also has a 51% interest in the Jubilee (Cu-Au) deposit. Hammer is an active mineral explorer, focused on discovering large copper-gold deposits of Ernest Henry style and has a range of prospective targets at various stages of testing.

Competent Person Statements

The information in this report as it relates to exploration results and geology was compiled by Mr. Mark Whittle, who is a Fellow of the AusIMM and an employee of the Company. Mr. Whittle, who is a shareholder and option-holder, has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activities which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Whittle consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

Where the Company references Mineral Resource Estimates previously announced, it confirms that it is not aware of any new information or data that materially affects the information included in those announcements and all material assumptions and technical parameters underpinning the resource estimates with those announcements continue to apply and have not materially changed.

JORC Table 1 report – Mount Isa Project Exploration Update

- This table is to accompany an ASX release updating the market with the results of preliminary ore sorting testwork conducted on mineralised samples from the Kalman Cu-Au-Mo-Re deposit. The Kalman Deposit is located on EPM13870 and EPM26775.
- Historic exploration data noted in this, and previous releases has been compiled and validated. It is the opinion of Hammer Metals that the exploration data are reliable.

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections in this information release.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc).* *These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report.* *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	**Drilling** No drilling is reported in this release. **Ore Sorting Samples** The sample consisted of full core from K-23A. Full core was transferred to 20 litre buckets, palletised and consigned to ALS in Mount Isa. The pallets were then transported in the ALS system to the ALS Metallurgy Lab in Perth. In this facility, ore was control crushed to 10-31.5mm and riffle split to prepare a sample for Steinert. After the Steinert test work was conducted, run output subsamples and the undersize fraction was consigned to ALS Metallurgy in Perth and analysed via Flame AAS and ICP-MS. These results were utilised by Steinert to determine the degree of upgrade the ore sorting achieved.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	**Drilling** No drilling is reported in this release.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether*	**Drilling** No drilling is reported in this release.

Criteria	JORC Code explanation	Commentary
	sample bias may have occurred due to preferential loss/gain of fine/coarse material.	
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	**Drilling** No drilling is reported in this release.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the insitu material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	**Drilling** No drilling is reported in this release.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	**Ore Sorting Samples** The ore sorting process was conducted by Steinert in Perth Western Australia. The process utilises a combination of colour camera, 3D laser, induction sensor and X-Ray sensor to differentiate inputs into waste and those matching parameters of target elements. These four sensors can be utilised to tailor an optimum combination for specific mineralisation mineralogy. The resulting concentrates were analysed via Flame AAS and ICP-MS and compared to initial assays undertaken by Kings Minerals in 2008. This enabled Steinert to determine the grade upgrade achieved in the various tests.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.*	**Drilling** No drilling is reported in this release.

Criteria	JORC Code explanation	Commentary
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. *Discuss any adjustment to assay data.*	
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	**Drilling and Rock Chip reporting** No drilling is reported in this release.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	**Drilling** No drilling is reported in this release.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	**Drilling** No drilling is reported in this release.
Sample security	*The measures taken to ensure sample security.*	**Ore Sorting Samples** Samples were collected by Hammer personnel and thereafter were consigned via internal ALS transport options.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	**Ore Sorting Samples** Data inputs and outputs have been reviewed and verified Hammer, ALS and Steinert personnel. No third-party audits have been conducted.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites,*	The Mt Isa Project consists of 34 tenements. The drilling reported herein was conducted on EPM13870 and EPM26775. These tenements are held by Mt Dockerell Mining

Criteria	JORC Code explanation	Commentary
	wilderness or national park and environmental settings. *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	Pty Ltd, a 100% owned subsidiary of Hammer Metals Limited.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Exploration at Kalman has been conducted since 2005 by Kings Minerals NL (now Santana Minerals Ltd) Syndicated Metals Ltd (now Discoverex Resources Ltd) and Hammer Metals Ltd. Prior to this period work was also undertaken by Texins (1970's), PIMEX (1980's) and MIM (early 1990's).
Geology	*Deposit type, geological setting and style of mineralisation.*	**Kalman Deposit** The Kalman Deposit is a polymetallic Deposit hosted within with the Kalman Fault on the western side of the Pilgrim Fault Zone. The Deposit is hosted by strongly altered calc silicates of the Corella Formation. Mineralisation consists of separate Cu-Au and Mo-Re zones which occupy the same spatial position but were emplaced separately.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* *easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole* *down hole length and interception depth* *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	See the attached tables.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	**Drilling** No drilling is reported in this release.

Criteria	JORC Code explanation	Commentary
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	**Drilling** No drilling is reported in this release.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	See attached figures.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.*	**Drilling** No drilling is reported in this release.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	All relevant information is disclosed in the attached release and/or is set out in this JORC Table 1.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Hammer Metals will review the results or the ore sorting testwork with a view to deciding on a larger follow-up program.